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UNITED STATES DEPARTMENT OF AGRICULTURE  
U.S. SOIL CONSERVATION SERVICE  
Region 8  
Albuquerque, New Mexico

Hugh G. Calkins, Regional Conservator

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RESOLUTIONS OF THE  
AGRONOMY MEETING  
HELD AT ALBUQUERQUE, NEW MEXICO  
FEBRUARY 24-27, 1937

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SOIL CONSERVATION SERVICE  
Albuquerque, New Mexico  
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RESOLUTIONS OF THE AGRONOMY COMMITTEE  
ALBUQUERQUE, FEBRUARY 24 - 27, 1937

The following resolutions were adopted by the Agronomy Section of the revegetation conference held in Albuquerque, February 24 to 27, 1937.

These resolutions represent the consensus of opinion of those present and treat of the fundamentals underlying certain phases of our work. It is requested that you familiarize yourself with the principles advocated and apply these principles to the work in the field. The Agronomy Section of the handbook will be based on these concepts but until it is completed these resolutions will form the basis of technical agronomic field work.



H. G. Calkins  
Regional Conservator

SEP 29 1938



## AGRONOMY RESOLUTIONS

### SOIL CONSERVATION AND CROPPING PRACTICES ON IRRIGATED LANDS

1. Twelve methods are considered as standard in the use of water to grow crops, namely:

1. Wild flooding
2. Border checks
3. Rectangular checks
4. Contour checks
5. Orchard and row crop furrows
6. Corrugation furrows
7. Orchard basins
8. Orchard contour furrows
9. Surface pipe
10. Underground tile
11. Sub-irrigation
12. Sprinkling

All are adaptable to the Region in specialized cases, wild flooding to be used only under the localized natural conditions found on the Navajo Reservation, and sprinkling in nurseries.

### IRRIGATION FARMING

1. The selection of a system of irrigation for any piece of farm land should be based on the soil type, the slope, the general topography, the water available, and the crops to be grown.

2. When land is to be flooded between borders, in general the lands should be relatively narrow and level between the borders, and the borders should be substantial.

3. Water runs should be as short as possible when slope, soil, head, and crop are considered, in order to prevent water logging and to increase the duty of water.

4. Permanent drops and turnouts in ditches are recommended.





5. In the construction of terraces, contour checks, or rectangular checks care must be taken not to remove too much top soil and thereby inflict a permanent injury to the land.

6. The planting of trees is recommended where detrimental effect of wind is in evidence, but should be handled separately as a windbreak with adequate provision for ditches.

7. In general light soils need frequent light irrigations. Heavy soils need more water less frequently.

8. On light sandy soils a large head of water should be used over a comparatively short period.

9. On heavy soils a small head of water should be used over a longer period.

10. Avoid steep grades particularly in heavy soils. The steeper the grade, the narrower the check.

11. Avoid over-use of water to prevent water logging and prolong the life of the project.

12. Flooding alkali land in basins plus a system of drainage will frequently be instrumental in effecting a cure for that condition.

13. A high water table is beneficial to and can be used for many crops if the water is not too near the surface, and if the water level does not fluctuate.

14. In planning a program for a proposed orchard irrigation project, consideration should be given to planting the trees to fit the proposed irrigation layout.

15. Furrow irrigation should be recommended whenever possible, especially where water is limited, and in medium textured soils where the movement of the water will be in a lateral direction before the downward drainage is complete.

16. Where wind erosion is a problem water should be made available to the land before clearing starts so that wind will not be effective in destroying the surface soil.

17. It is not practicable to try to irrigate land that is already set up as a dry farming project with broad base terraces in place, unless further preparation is made for irrigation.

18. In estimating the duty of water it should be remembered that under ordinary conditions one-third of the water is lost by evaporation and seepage, if carried in canals for any considerable distance.

19. Soil drainage is an important factor, and should be taken into consideration in the development of land for irrigation.



20. Water is the limiting factor to agriculture in the South-western Region and its efficient use is paramount in the development of new land.

21. In flooding land between borders the water should start out on the run as a level sheet for 30 ft. before moving into the grade.

22. Crop rotation and diversification are recommended where feasible as a soil protective measure, especially where wind is a hazard.

23. In many cases bench terracing should not be encouraged from a cost standpoint, and except in the case of orchards, cultivation on steep slopes should be avoided.

24. Contour checks are recommended in preference to rectangular checks where the topography is uneven in order to avoid excessive dirt moving.

Farm gullies and their control require intensive treatment with a comparatively large justifiable expenditure. Grass, shrubs, sweet clover, brush and permanent structures may be necessary.

It is recommended that rodents shall be controlled where they are a menace to the success of irrigation practice.

It is recommended that wildlife be encouraged where suitable habitat may be maintained without detriment to the irrigation project, especially in windbreaks, woodlots and waste areas bordering the project.

## DRY LAND FARMING

### I - Wind Erosion

A. Listing is recommended for the control of wind erosion as follows:

1. Furrows should be run on the contour when used on sloping lands.
2. Furrows should be at right angles to the prevailing winds on level lands.

B. Strip Cropping, where adaptable, is recommended for the control of wind erosion as follows:

1. Strips should be of such width and spacing as to effectually control wind erosion.
2. Strips should be planted on the contour when used on sloping lands.



3. Strips should be planted at right angles to the prevailing winds on level lands.
  4. Close growing crops should be used for the strips wherever possible and strips containing close growing crops should be spaced sufficiently close together to minimize wind erosion.
  5. When the strip is to be harvested a high stubble should be left.
- C. When a row crop is to follow small grain, it may be desirable in some instances to leave the stubble cover until the erosion hazard is past. Stubble on erodible soils should not be pastured.
- D. Terraces are not recommended for control of wind erosion.
- E. Permanent cover is recommended as a control for wind erosion on abandoned farm lands, lands to be taken out of cultivation, and for earthen structures. It is recommended that no grazing be permitted on earthen structures.
- F. Puddling is not recommended for the control of wind erosion.

## II - Water Conservation

### A. Terracing:

1. Is recommended for flood control purposes where adaptable.
  2. Is recommended for use on slopes up to five percent with an eighteen-inch terrace and up to ten percent slope with a 24-inch terrace and only then if used in conjunction with the proper tillage practices.
- B. Methods of cultivation adaptable to the various conditions found in the region are to be worked out by the district concerned.

## III - Fallowing

- A. Fallowing operations if used should be carried on with such implements as the lister, spring tooth cultivator or shovel type implements that leave the soil in a rough, ridged condition. Tillage practices tending to produce a smooth surface or a dust mulch should be discouraged.





- B. All fallowing operations should be on the contour.
- C. Strip cropping with either perennials or close-growing annuals or combinations of both is recommended where practicable. A crop rotation system should be worked out for use in areas where strip cropping and fallowing are practiced.

#### IV - Cultivation Methods

- A. All cultivation operations should be on the contour.
- B. Implements of the type that leave the soil in a roughened or ridged condition such as the lister, spring tooth harrow, duck-foot cultivator or shovel type implements are advocated. The use of implements such as the spike tooth harrow, sled, drag, or other implements that tend to leave the soil with a dust mulch should be discouraged.

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